GOVERNMENT OF INDIA
EARTH SCIENCES
LOK SABHA

UNSTARRED QUESTION NO:4123
ANSWERED ON:22.04.2008
OCEAN THERMAL ENERGY CONVERSION
Gaikwad Shri Eknath Mahadeo;Yadav Shri Anirudh Prasad (Sadhu);Yaskhi Shri Madhu Goud

Will the Minister of EARTH SCIENCES be pleased to state:

(a) whether the National Institute of Ocean Technology (NIOT) had initiated a Rs.35.25 crore pilot project titled Ocean Thermal Energy Conversion in June, 1998;

(b) if so, the details and the present status of the project;

(c) whether the C & AG has given same remarks on this project;

(d) if so, the details thereof;

(e) whether the Government has conducted any inquiry in this regard;

(f) if so, the details thereof; and

(g) the corrective measures taken/ proposed to be taken by the Government in this regard?

Answer

MINISTER OF SCIENCE & TECHNOLOGY AND MINISTER OF EARTH SCIENCES(SHRI KAPIL SIBAL)

(a) Yes, Sir.

(b) National Institute of Ocean Technology (NIOT), an autonomous institute under the Ministry undertook a pilot project of 1 MW floating Ocean Thermal energy Conversion (OTEC) Plant under `Jai Vigyan` Mission. The plant was set up on a barge named `Sagar Shakti`, for deployment in open sea having a depth of over 1000 meters off Tutocorin. The 1 Mega Watt (MW) Ocean Thermal Energy Conversion (OTEC) Technology Demonstration project was initially approved as one of the Mission Project of National Institute of Ocean Technology (NIOT) in Sept. 1998 at the total cost of Rs.35.25 Crore for a period of two years from 1998-99. However, due to rough weather and inadequate support during the deployment of 1 meter diameter and 1000 meter long pipe, the pipe could not be supported and resulted in the loss of pipe. The Ministry further approved Revised Cost Estimates (RCE) of Rs. 61.13 Crores and Extension of the project up to 31st December 2002 on 22.02.02. There was once again loss of the intake pipe. An expert committee was appointed for failure analysis. After the expert committee's analysis, a project proposal was prepared for completion of the project. The proposal was referred to Ministry of Finance for their approval. Ministry of Finance recommended for winding up the project and the project was accordingly discontinued.

(c) Yes, Sir.

(d) The C&AG has observed that NIOT did not ensure the expertise of the contractors who were to undertake deployment of cold water pipe and the existence of infrastructure required for deployment like vessels with Global Positioning System, winch, etc. Poor planning and deficient project management led to unfruitful expenditure besides non achievement of the stated objectives of generation of power from ocean thermal energy.

(e)&(f) Yes, Sir. An Expert committee chaired by Dr. S.C.Gupta, Retired Director, Vikram Sarabhai Space Centre, Indian Space Research organization (ISRO) Trivendrum analysed the cases of failures. The Committee suggested various measures to avoid failures.

(g) The proposal for generating energy from ocean using the principle of OTEC were attempted for the first time in the country. Though the deployment of the pipe required to bring the cold water on the Barge Sagar Shakti from a water depth of 1000m was not successful as a part of OTEC programme, and the programme was discontinued. Subsequently, the pipe was successfully deployed upto 700 m depth (which have also been recorded in the C&AG para) after analyzing the previous failures as a part of low temperature thermal Desalination Pilot Project. NIOT has successfully deployed these pipes on 3 occasions and no loss of pipe has taken place.